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10/598,398	12/22/2006	Charles Watkinson		3733

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EXAMINER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

FORMATION OF GLASS FLAKES

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The rejections of claims 5-9 under 35 U.S.C. 103(a) are maintained and repeated below for convenience.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watkinson (US 5017207).

Regarding claim 5, Watkinson discloses a method for changing the size and thickness of the flake comprising the steps of feeding molten glass in a down direction to a rotating cup (5); allowing the stream to flow over the edge of the cup and into a gap (19) and in an angular direction via air flow between plates (9 and 11). Therefore the stream is kept in a flattened state and pulled so as solidification or cooling of the molten glass occurs. The thickness of the flake can be changed by the step of adjusting the flow of glass into the cup, the speed of rotation of the cup, the distance between the annular extraction plates, varying the vacuum pull or velocity through the gap between the annular extraction plates, and/or the diameter of the plates. Furthermore, Watkinson discloses that each different material requires different parameters such as the speed of rotation of the cup, temperature of the molten material, volume of the

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molten material, gap between the plates, and airflow between the plates will be different and that the variable parameters can be varied within wide ranges and all have an inter-relation to each other. Watkinson states "that based on the material and the variable parameters above it would be apparent one skilled addressee in the art how to vary the parameters to produce flakes of required size and thickness. It is preferred, therefore that the apparatus includes means to vary as many of the above parameters as possible so that a wide variety of materials can be manufactured on the apparatus both in diameter and thickness without further grading, crushing or grinding being necessary (Col 2; lines 20-65, Col 3; lines 6-66).

Watkinson does not explicitly disclose adjusting the distance between the cup or disc and an entrance to the gap between the pair of plates to achieve the desired thickness; however Watkinson does teach varying the many parameters discussed above in order to vary the thickness of the flake. Among the above mentioned parameters, Watkinson discloses varying the diameter of the plates to adjust the thickness of the flake produced. Varying the diameter of the plate would adjust the distance over which the molten material flows after it has flowed out of the cup. Therefore, as one skilled in the art would notice, it is the modification of the distance over which the molten material travels after it has flowed out of the cup that causes a change the thickness of the flakes produced. Thus it would have been obvious to a person of ordinary skill in the art to try to vary the distance between the cup and the entrance gap in an attempt to vary the distance the material flows after leaving the cup and achieve a desired particle thickness distribution of flakes, as a person with ordinary

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skill has good reason to pursue the known options within his or her grasp. In turn, because altering the distance that the molten material travels by varying the parameters of the apparatus would change the distribution of size and/or thickness of the particles as predicted by the prior art, it would have been obvious to vary the distance between the cup and entrance to the gap between the pair of plates. *KSR*, 550 U.S. at ____, 82 USPQ2d at 1391.

Regarding claims 6-9, it would have been obvious to one of ordinary skill in the art to vary the gap between the cup and the pair of plates in order to change the distance the molten material travels as discussed above. Watkinson does not disclose changing the distance between the cup and the gap between the plates by a specific percentage; however the normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages. *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969). Furthermore, a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977)

In the instant case the change in thickness of the flake is an expected result of changing the distance between the gap to the plates and the rim of the cup. Thus, it would have been obvious to determine, through routine experimentation, the optimum range to vary the distance between the cup and the entrance to the plate to produce flakes with the desired thickness because the prior art teaches adjusting many

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parameters, including the distance the molten material flows, to vary the thickness size distribution.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 5 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 9 of U.S. Patent No. 5,017,207 in view of WO88/08412. Although the conflicting claims are not identical, they are not patentably distinct from each other because ‘207 claims;

A method of forming flakes of frangible material from a heated stream of molten material, which comprises

(a) supplying a heated stream of molten material which is capable of forming

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frangible flakes upon cooling from molten to solid state, in a downward direction into a cup having an open mouth defined by an edge and which faces upwardly,

(b) simultaneously rotating the upwardly facing cup to cause the stream of molten material to flow upwardly over the edge of the cup and radially outwardly therefrom under centrifugal force,

(c) subjecting the outwardly flowing molten material to a flow of air radially outwardly in a gap defined between a pair of substantially parallel plates to direct the flow of molten material radially outwardly between the plates without touching the plates for solidifying the molten material, the flow of air being sufficient to maintain the molten material flat and to pull the molten material radially outwardly between the plates as it solidifies, and

(d) breaking the flat solidified material into flakes by continued subjecting of the solidified material to the flow of air radially outwardly between the plates.

Watkinson '207 includes all of the claimed features of the present application except for varying a distance between the cup, or the disc, and an entrance to the gap between the pair of plates to obtain a desired particle thickness. However, '412 discloses the thickness of the flake can be changed by the step of adjusting the flow of glass into the cup, the speed of rotation of the cup, the distance between the annular extraction plates, varying the vacuum pull or velocity through the gap between the annular extraction plates, and/or the diameter of the plates. Furthermore, '412

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discloses that it would be “readily apparent to the skilled addressee of the specification on how to vary the parameters to produce flakes of required size and thickness, thus it would have been obvious to vary the distance between the cup and the entrance to the gap in order to achieve the desired thickness.

Response to Arguments

5. Applicant's arguments filed 02/19/2009 have been fully considered but they are not persuasive.

6. Applicant argues that although it was previously known that variation of the distance between the cup and the plates was one of many factors which could affect flake size (as explained in Applicant's Specification at Page 4), it was not recognized that varying this distance could have a profound effect on particle thickness size distribution. Prior to the development of the present invention, it had been assumed that any significant increase of the cup-plate separation, beyond the median at which an acceptable product is obtained, would lead to a deterioration of the product and, in particular, its flatness and any such reduction simply reduced the nominal flake diameter. It was therefore surprising for the inventor to discover that the cup-plate separation can be substantially increased or decreased with an associated change in particle size distribution, provided the nominal thickness difference is compensated for by one of the remaining parameters.

7. In response to applicant's arguments, the prior art, Watkinson '207, discusses varying a variety of parameters to change the thickness of the flakes produced. Among

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the various parameters two of particular importance and discussed above are varying the diameter of the plates and the vacuum pull, both of which change the distance the glass travels from the cup to collection. One of ordinary skill in the art would recognize the obvious option of varying the distance between the plate and the cup to create the same result as varying the parameters listed above, i.e. the result of changing the distance the glass travels from cup to collection. Furthermore, applicant even states within their arguments that this option of varying the distance between the cup and plate in order to affect flake size was recognized by the applicant themselves, i.e. "it was previously known that variation of the distance between the cup and the plates was one of many factors which could affect flake size (as explained in Applicant's Specification at Page 4)." See MPEP 2145 which states, "A person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely that product [was] not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103." *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1397 (2007)."

Additionally applicant's argument that it was thought that it had been assumed that any significant increase of the cup-plate separation, beyond the median at which an acceptable product is obtained, would lead to a deterioration of the product does not overcome obviousness but instead further supports that it would have been obvious for one of ordinary skill in the art to try to alter the cup-plate separation. It is implied by the above remark, that it was already known in the art to alter the cup-plate separation

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within a certain range (i.e. below any “significant increase”) in order to alter the thickness distribution of the flake product. It should be noted that any alteration of cup-plate distance is considered to read on this limitation of claim 5 of the present application.

In response to applicants arguments regarding the obvious-type double patenting rejections, applicant is urged to see MPEP 804, specifically under the heading Obvious-type which includes, “A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s).” Claim 9 of Watkinson '207 is not considered patentably distinct from claim 5 of the present application for the same obviousness discussed in the rejections above as well as the response to applicant's arguments included above.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jodi Cohen whose telephone number is 571-270-3966. The examiner can normally be reached on Monday-Friday 7:00am-5:00pm Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Carlos Lopez/
Primary Examiner, Art Unit 1791
/Jodi F. Cohen/
Examiner, Art Unit 1791